

Figure 1 (Prior Art)

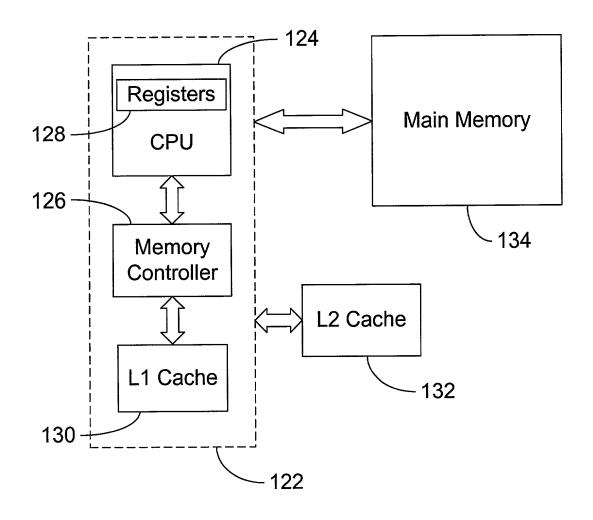
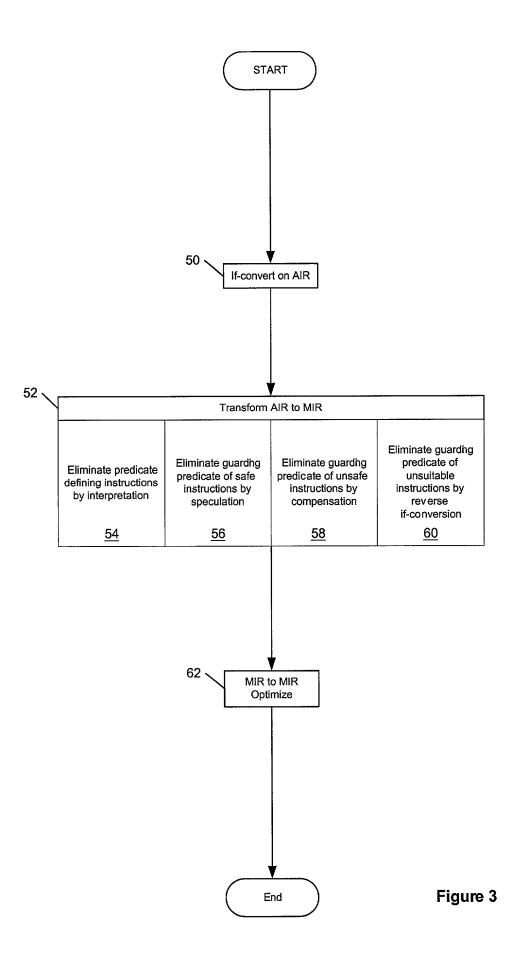


Figure 2



DO 65 I=1,NOPAR

IF (VALUE(LOCV+I).EQ.AUNDEF) GO TO 62

IF (IVCHK(LOCM+I).LT.0) GO TO 55

IF (VALUE(LOCV+I).LT.0.0D0) GO TO 62

- 55 IF (ITAB(I).NE.0) GO TO 65 ITAB(I)=IFMT(LOCM+I) GO TO 65
- 62 VALUE(LOCV+I)=DEFVAL(LOCM+I)
- 65 CONTINUE.

Figure 4

```
!Loop={ B1 B2 B3 B4 B5 B6 B7}
         B1: !(ki=if,fl=H,dot=B7,op=4,do=B0,po=B7)
          t113 = Iddf(t110)
          t114 = fcmpd(t113,t38)
          -t118 = fbe,pn(t114,B6)
          -t120 = nop()
          B2: !(ki=if,op=4,do=B1,po=B7)
          t19 = Id(t70)
          t60 = cmp(t19,0)
          -t123 = bl,pn(t60,B4)
          -t125 = nop()
          B3: !(ki=if,op=3,do=B2,po=B7)
          t126 = fcmped(t113,t20)
          -t129 = fbl,pn(t126,B6)
202 -
          -t131 = nop()
          B4: !(ki=if,op=4,do=B2,po=B7)
          t19 = Id(t109)
          t60 = cmp(t19,0)
          -t135 = bne,pn(t60,B7)
          -t137 = nop()
         B5: !(ki=go,op=4,do=B4,po=B7)
          t19 = Id(t111)
          -t140 = st(t19,t109)
          -t142 = ba(t60,B7)
          -t144 = nop()
         B6: !(ki=go,op=2,do=B1,po=B7)
          t145 = Iddf(t71)
          -t147 = stdf(t145,t110)
         B7: !(ki=if,fl=T,doh=B1,op=9,dc=B1)
          t68 = add(t68,1)
          t71 = add(t71.8)
          t110 = add(t110,8)
          t70 = add(t70,4)
          t111 = add(t111,4)
          t109 = add(t109,4)
          t60 = cmp(t68, t59)
          -t150 = ble,pn(t60,B1)
          -t152 = nop()
```

Figure 5

```
B1: !(ki=if,fl=HTRK,op=30,do=B0,po=B7)
      t113 = Iddf(t110) !o [1] n1
      P7 = tfbe(t114,0) ! [3 2] n5
      P6 = mov(0)
                       ! [4] n6
      P5 = mov(0)
                       ! [5] n6
      P4 = mov(0)
                       ! [6] n6
      P3 = tfbe(t114,1) ! [72] n8
      t19 = Id(t70) &P7 ! [8] n10
      t60 = cmp(t19,0) &P7
                             ! [98] n11
      P6 = tbl(t60.0) &P7
                             ! [10 9] n12
      P5 = tbl(t60,1) &P7
                             ! [119] n13
^{205} \searrow t126 = fcmped(t113,t20) &P6
                                    ! [12 1 ] n15
      P5 = tfbl(t126,0) & P6
                           ! [13 12 ] n16
      P3 = tfbl(t126,1) & P6
                             ! [14 12 ] n17
     t19 = ld(t109) &P5! [15] n19
     t60 = cmp(t19,0) &P5
                             ! [16 15] n20
      P4 = tbne(t60,0) &P5
                             ! [17 16] n21
     t19 = Id(t111) \&P4 ! [18] n23
     -t140 = st(t19,t109) &P4 ! [19 18] n24
     t145 = Iddf(t71) &P3
                             ! [20] n26
     -t147 = stdf(t145,t110) &P3
                                   ! [21 20 ] n27
     t68 = add(t68,1)
                       !o [22] n29
     t71 = add(t71,8)
                       !o [23] n31
     t110 = add(t110,8)!o [24] n32
     t70 = add(t70,4) !o [25] n34
     t111 = add(t111,4)!o [26] n35
     t109 = add(t109,4)!o [27] n36
     t60 = cmp(t68,t59) ! [28 22] n38
     -t150 = ble,pn(t60,B1)
                            ! [29 28 ] n40
     -t152 = nop()
                       ! [30]
```

Figure 6

```
B1:
!(ki=if,fl=HTRK,op=43,su=[B1,B8],pr=[B0,B1])
 t113 = Iddf(t110) !o [1] n1
 t114 = fcmpd(t113,t38) ! [2 1 ] n3
                        ! [3] n5
 P7 = mov(1)
 P7 = move(t114,0)! [42] n7
                        ! [5] n8
 P6 = mov(0)
                        ! [6] n8
 P5 = mov(0)
                        ! [7] n8
 P4 = mov(0)
 P3 = xor(P7,1) ! [8 4 ] n9
 t19 = Iduwa(t70) ! [9] n11
 t60 = cmp(t19,0)  [10 9 ] n12
                         ! [11] n5
 Q2 = mov(1)
 Q2 = movI(t60,0) ! [12 10 ] n13
 P6 = movrnz(P7,Q2) ! [13 4 12 ] n14
 Q2 = xor(P6,1) ! [14 13 ] n15
 P5 = movrnz(P7,Q2) ! [15 4 14 ] n16
 t126 = fcmped(t113,t20) ! [16 1] n18
                         ! [17] n5
 Q3 = mov(1)
 Q3 = movI(t126,0) ! [18 16] n19
 P5 = movrnz(P6,Q3) ! [19 13 18] n20
 Q3 = xor(P5,1) ! [20 19] n21
                      ! [21 13 20 ] n22
 P3 = movrnz(P6,Q3)
 t19 = Iduwa(t109) ! [22] n24
 t60 = cmp(t19,0) ! [23 22 ] n25
                         ! [24] n5
 Q4 = mov(1)
 Q4 = movne(t60,0)! [25 23 ] n26
  P4 = movrnz(P5,Q4) ! [26 19 25 ] n27
  t19 = Iduwa(t111) ! [27] n29
  t176 = Iduwa(t109)! [28] n24
  t176 = movrnz(P4,t19) ! [29 26 27 ] n30
                         ! [30 29] n31
 -t140 = st(t176,t109)
  t145 = Iddfa(t71) ! [31 ] n33
  t177 = Iddfa(t110) ! [32] n34
  t177 = movrnz(P3,t145) ! [33 21 31 ] n35
 -t147 = stdf(t177,t110) ! [34 33 ] n36
                   lo [35] n38
  t68 = add(t68,1)
                   !o [36] n40
  t71 = add(t71,8)
  t110 = add(t110,8)!o [37] n41
  t70 = add(t70,4) !o [38] n43
  t111 = add(t111,4)!o [39] n44
  t109 = add(t109,4)!o [40] n45
  t60 = cmp(t68,t59) ! [41 35] n47
  -t150 = ble,pn(t60,B1) ! [42 41 ] n49
                   ! [43]
  -t152 = nop()
```

Figure 7

```
B1: !(ki=if,fl=HTRK,op=35,su=[B1,B8],pr=[B0,B1])
 t113 = Idd(t110)
 t114 = fcmpd(t113,t38)
 P7 = mov(1)
 P7 = move(t114,0)
 t19 = Iduwa(t70)
 Q2 = srl(t19,31)
 P6 = andn(P7,Q2)
 P5 = andn(P7,P6)
 W7 = fcmped(t113,t20)
 Q3 = mov(1)
 Q3 = movI(W7,0)
 P5 = movrnz(P6,Q3)
 Q6 = andn(P6,P5)
 Q5 = or(P6,P7)
 P3 = orn(Q6,Q5)
 Q4 = Iduwa(t109)
 Q4 = movrnz(Q4,1)
 P4 = andn(P5,Q4)
 t19 = Iduwa(t111)
 W11 = Iduwa(t109)
 W11 = movrnz(P4,t19)
-t140 = st(W11,t109)
t145 = Iddfa(t71)
W13 = Iddfa(t110)
W13 = fmovrdnz(P3,t145)
-t147 = std(W13,t110)
t68 = add(t68,1)
t71 = add(t71,8)
t110 = add(t110,8)
t70 = add(t70,4)
t111 = add(t111,4)
t109 = add(t109,4)
t60 = cmp(t68, t59)
-t150 = ble,pn(t60,B1)
-t152 = nop()
```

Figure 8

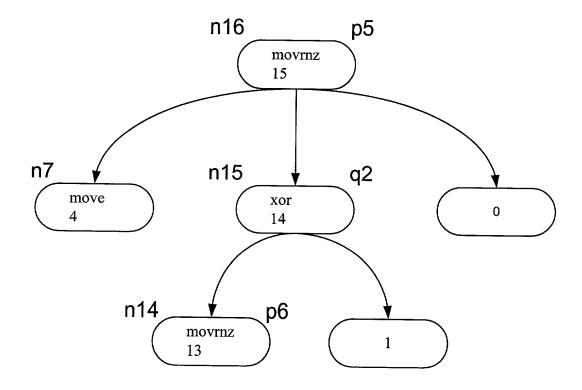


Figure 9

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B1:
         !(ki=if,fl=HTRK,op=29,su=[B1,B8],pr=[B0,B1])
          t113 = Idd(t110)
          t114 = fcmpd(t113,t38)
          P7 = tfbe(t114,0)
          t19 = Iduwa(t70)
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          Q2 = srl(t19,31)
          P6 = andn(P7,Q2)
          P5 = andn(P7,P6)
          W7 = fcmped(t113,t20)
          Q3 = tfbl(W7,0)
          P5 = movrnz(P6,Q3)
          Q6 = andn(P6,P5)
          Q5 = or(P6,P7)
          P3 = orn(Q6,Q5)
          Q4 = Iduwa(t109)
          Q4 = movrnz(Q4,1)
          P4 = andn(P5,Q4)
          t19 = Iduwa(t111)
         -t140 = st(t19,t109) &P4
          t145 = Idda(t71)
         -t147 = std(t145,t110)
                                   &P3
          t68 = add(t68,1)
          t71 = add(t71.8)
          t110 = add(t110,8)
          t70 = add(t70,4)
          t111 = add(t111,4)
          t109 = add(t109,4)
          t60 = cmp(t68, t59)
         -t150 = ble,pn(t60,B1)
         -t152 = nop()
```

Figure 10